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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,664	02/07/2001	Sandhya Mishra	2001_0120A	9236

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EXAMINER

MARX, IRENE

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/777,664	MISHRA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Irene Marx	1651	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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The application should be reviewed for errors and conformity with domestic practice.

As noted in the last Office action error occurs, for example, in the spelling of “cyanophyceae” and “Nostocaceae”; in addition “cyanophyceae” should be capitalized. Also a space is missing at “of25.5°Be” at the penultimate line of claim 21. For grammatical consistency, it is noted that “cyanobacteria” is plural. Appropriate correction is required.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/03 is acknowledged. Claims 21-38 are being considered on the merits.

The rejection under 35 U.S.C 112, first paragraph regarding deposit only is withdrawn in view of applicant's averments.

#### ***Claim Rejections - 35 USC § 112***

Claims 21-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with confusing and/or improper language. Appropriate correction is required. For example:

Claim 21 is vague and indefinite in that the antecedent basis for “it” at line 6 is at least ambiguous.

Throughout the claims “calcium ion” should be replaced with “calcium ions” as appropriate.

Claim 1 is confusing in the recitation of “sea brine and subsoil brine”. The recitation should properly be “sea brine or subsoil brine”.

Claim 25 is vague and indefinite in the recitation of “a Consortium (ATCC PTA-4603)” with respect to the deposited material. Amendment to --the Consortium ATCC PTA-4603-- would be remedial.

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Claims 27 and 28 are vague and indefinite in the recitation in claim 28 of “the isolated cultures are present in brine”. Claim 28 suggests that the cultures are present in brine in nature in isolated form. Thus claim 27, wherein isolation is carried out, appears redundant. Moreover, claims 28 and 29 fail to find proper antecedent basis in claim 27 for “cultures”. Furthermore, the recitation of “are present” with respect to the cultures is not deemed to constitute a positive limitation, since mere “presence” does not imply effectiveness in any process.

In claim 30, it is unclear that step (ii) mere inoculation will result in the conversion to gypsum. Is this a chemical step or a microbial step? Is the concentration microbial? It is apparent that critical process steps are omitted in claim 21.

In addition, the recitation of “a” load and “a” volume render claim 30 indefinite as to what is intended. Amendment to “the” in this regard would be remedial.

Claim 31 is confusing as to the antecedent basis for “the method”. The step intended should be particularly outlined.

The recitation of “the contact” in claim 33 renders the claim vague and indefinite. This terminology fails to find proper antecedent basis in claim 21 on which it ultimately depends.

In claims 34 and 35 it is uncertain what is intended by “residual content” of calcium. There is no clear antecedent basis for this recitation in claim 21.

In claim 36 it is uncertain what is intended by “a declining phase of its activity”. Also it is uncertain how long an “exposure” is required to “ooze out the accumulated calcium ion”. Is it a nanosecond, 2 seconds, a few hours, a day etc. Also, the correct term appears to be “ions” in this context. It is uncertain how mere “exposure” to dilute brine makes the cyanobacteria “suitable for recycle”.

In claim 21, it is recommended that the phrase “by removing calcium from the sea brine or subsoil brine” be added at line 2, after “calcium ion impurity”. In fact “impurity” should properly amended to “impurities”, since more than one ion is involved.

Also, it is recommended that at the end of claim 21, the phrase, --wherein removal of calcium ions by Cyanobacteria results in salt having reduced calcium ion impurities-- be added to complete and clarify the invention.

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To better characterize the invention, it is recommended that language such as “for a time effective to remove calcium ions”; “at conditions effect to remove calcium ions”, etc. as appropriate be added to the claims to further clarify the invention.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Michael G. Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irene Marx  
Primary Examiner  
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